130L-1

FENCE CONSTRUCTION

AG 130-L

UNIT OBJECTIVE

After completion of this unit, students will understand basic farm and field fence construction and know the different applications for the different type of fencing.

SPECIFIC OBJECTIVES AND COMPETENCIES

After completion of this unit, the student should be able to:

1. Match terms associated with fence construction to their correct definitions.
2. Understand the different factors too consider when planning a fencing project.
3. Know the different types of temporary and permanent pasture fences.
4. Identify and understand the use of different tools used in fence construction.
5. Identify the different types of wire used in fence construction.
6. Know the steps in fence construction.
7. Know how the stretch woven wire and barbed wire.
8. Understand how to safely handle and use barbed wire.

A. Terms and Definitions

1. Line wires – Wires that run the length of the fence
2. Stay wires – Wires between the top and bottom wires
3. Suspension fences – Used for cross or boundary fencing on cattle ranges
4. Tension curve – Spring effect that is present in woven wire
5. Wire clip – Fastener used on steel posts
6. Fence staple – Fastener used on wooden posts
7. Wood preservative – product used to treat wood to increase the longevity of the wood
8. Movable fences – Intended to stay in one location for only a few weeks
9. Deadman – Usually a rock or tire buried underground to hold the fence down in low spots

B. Factors to consider when planning the location and arrangement of fences

1. Land Capability
2. Coordination of fields to cropping plans
3. Relation of fences to soil conservation practices
4. Placement justification of permanent and movable fences

    a. Moveable fences

        1) Welded wire panels used at the county fair.
        2) Field fence wire on Tee posts to temporarily hold in sheep. Once the area is grazed off the sheep are moved to another area.

    b. Permanent fences

        1) Fences build for permanent pastures, corals, or yards not intended to be moved.

5. Arrangement of fields and passageways for convenience and labor savings
6. Building order of permanent fences

C. Types of livestock

1. Horses – Horses are mostly held in by fences with a combination of field fence wire on bottom and one or two strands of barbed wire on top.

2. Cattle – Cattle are usually held in by four or five strands of Barbed wire.
3. Sheep – Sheep are fenced in with field fence wire, sheep are smaller than cattle and can slip through a barbed wire fence.
4. Pigs – Pigs are usually raised in pens, but on pasture use field fence wire with at least one strand of barbed wire on the bottom to prevent them from pushing under.
5. Dogs – To keep dogs out of your pasture use a field fence wire with at least one strand of barbed wire on the bottom, same as you would to keep pigs in.

D. Types of Wire

1. Barbed Wire is fencing wire with sharp bards at regular intervals
2. Smooth Wire – a smooth wire, single or double strand, mostly used in electric fences.
3. Woven Wire – Commonly know as field fence wire, made by a weaving wire to form a mesh pattern. Mostly used in combination with barbed wire.
4. Placement of Wire – Always place the wire to the inside of the fence where livestock is being held. If livestock pushes on the fence the wire will be pushed against the post and not put any pressure on the fasteners.

E. Types of Posts

1. Wood Posts – Most common type used

    a. Split Cedar – Posts made from cedar logs cut eight feet long and split into 1/4s.
    b. Railroad Ties – Railroad ties make good solid fence posts. Mostly used in corals, end posts and corner braces.
    c. Cedar 4' X 4's are used mainly on lawn fences and not on field fences

2. Steal Posts

    a. Tee Posts – Metal posts with groves on one side to hold up the wire. Looking at the top of the post you will see the post has the shape of a T for strength.
    b. Oil Pipe – Used oil pipe four inches in diameter, can be purchased at a cheap price and cut into lengths for fence posts. Entire corals have been made from oil pipe.

E. Steps in Fence Construction

1. Establish location

   a. Establish the line of the fence.
   b. Clear all brush and other obstacles.

2. Placement of the posts.

   a. Corner posts are the first posts to go in.
   b. Run a string or wire from corner post to corner post along the fence line, pull tight to ensure a straight line.
   c. Mark off the spaces for the holes to be dug or posts to be placed.
   d. Bury posts or drive them in place

3. Stretching Wire

   a. Once the corner posts are in place, end braces are in place and the posts are in place stretch the wire.
   b. Wire can be stretched by anchoring the stretchers or pullers to the bumper of a pick-up or to a tractor.
   c. Wire can be stretched by using a wench on the front or back of a pick-up.

4. Fastening wire to the posts

   a. At one end tie the wires off to the posts and stretch from the other end
   b. Once the wire is stretched tie the wire off at the end you are pulling from.
   c. To fasten wire to a wooden post, used a fence staple as illustrated on page 130L-5.
   d. To fasten wire to a metal post, use a metal clip as shown on page 130L-8.

References:

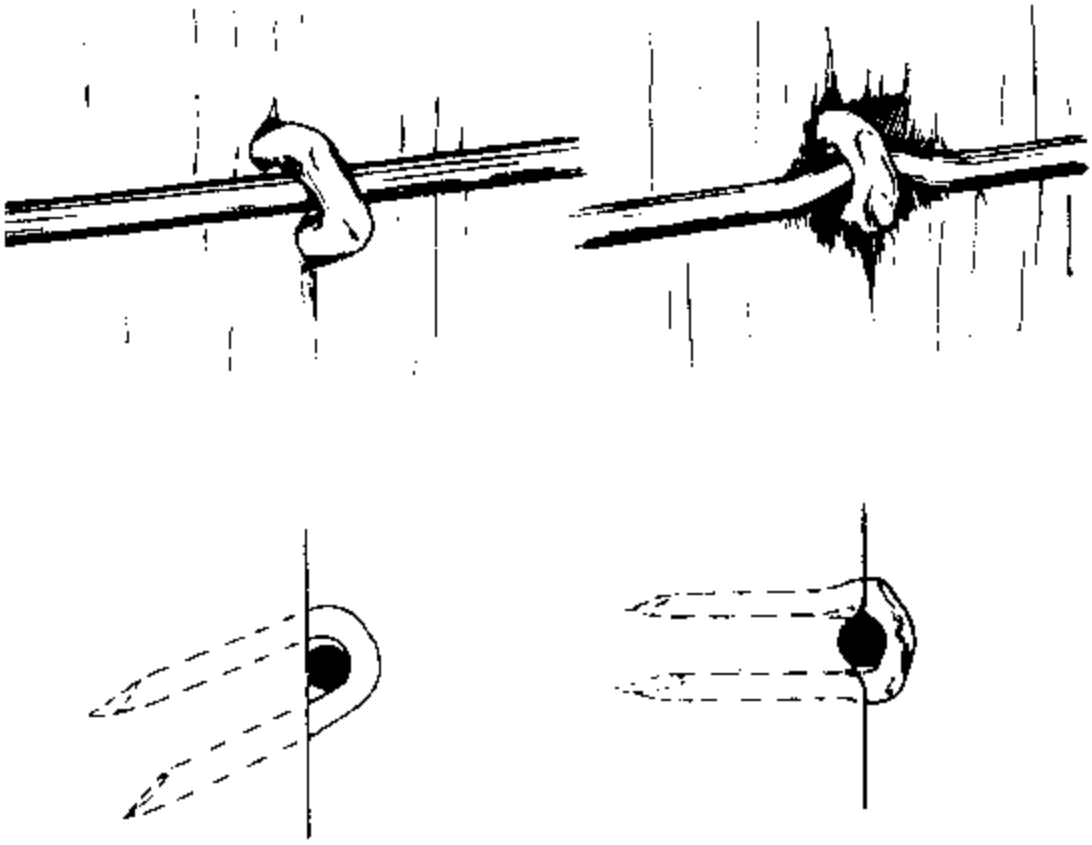
Cooper, Elmer L. (1997). AGRICULTURAL MECHANICS: FUNDAMENTALS AND APPLICATIONS, 3ed EDITION. Albany, NY: Delmar Publishers.

Phipps, Lloyd J., and Miller, Glen M.(1998) AGRISCIENCE MECHANICS. Danville, IL: Interstate Publishing

USE OF FENCE STAPLES

Driving the fence staples into far will weaken the wire.

Only drive the fence staple in far enough to hold the wire snug to the fence post

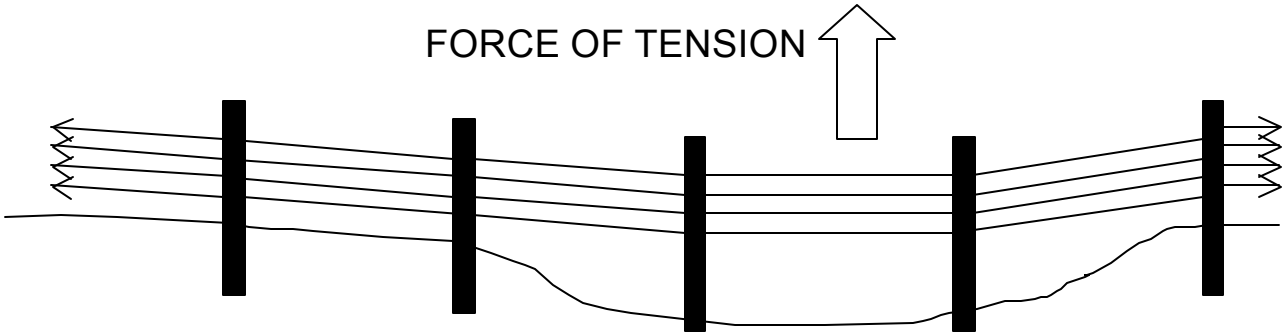


RIGHT WAY WRONG WAY

USE OF A DEADMAN

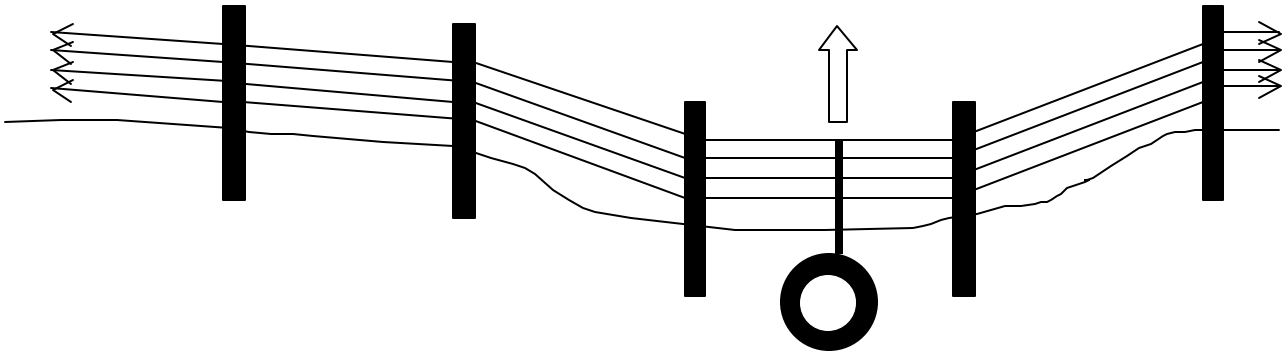
WITHOUT THE USE OF A DEADMAN

FORCE OF TENSION



WITH THE USE OF A DEADMAN

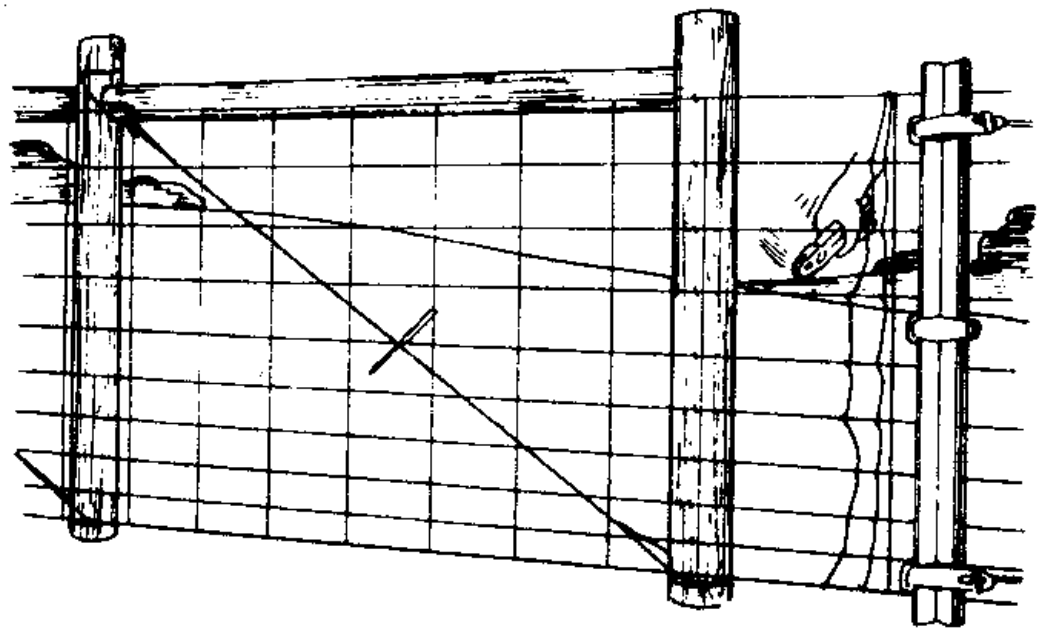
FORCE OF TENSION



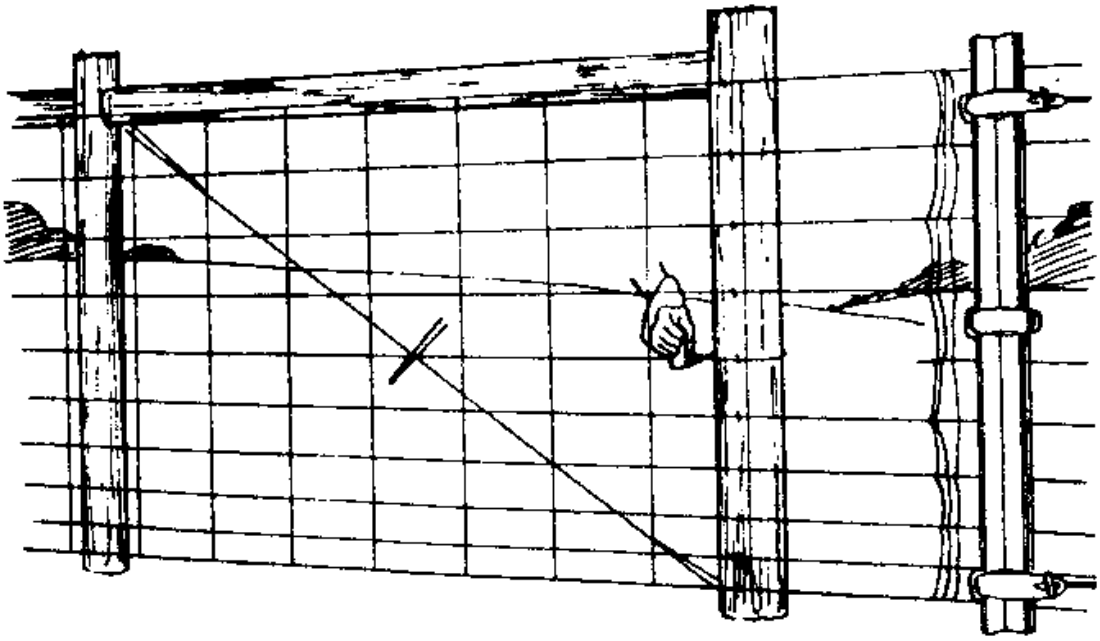
DEADMANS ARE USE IN LOW SPOTS OF THE FENCE LINE. WHEN THE WIRES ARE TIGHTENED THEY WILL TEND TO PULL THE FENCE UP, DEADMANS (usually a big rock or an old tire) ARE WIRED TO THE FENCE WIRES KEEPING THE FENCE ANCHORED DOWN.

TYING OFF FIELD FENCE TO THE END POST

1. Staple each line wire securely to the end post
2. Remove stay wires a sufficient distance to extend around end post and wrap back on itself



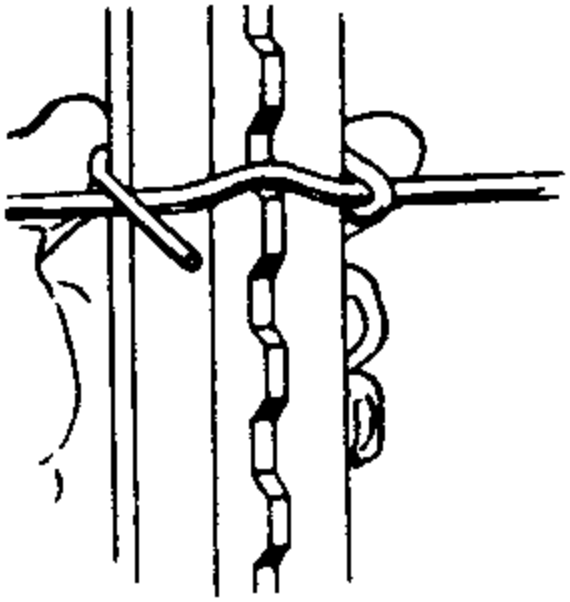
3. Cut middle line wire, extend around post, and wrap back on itself



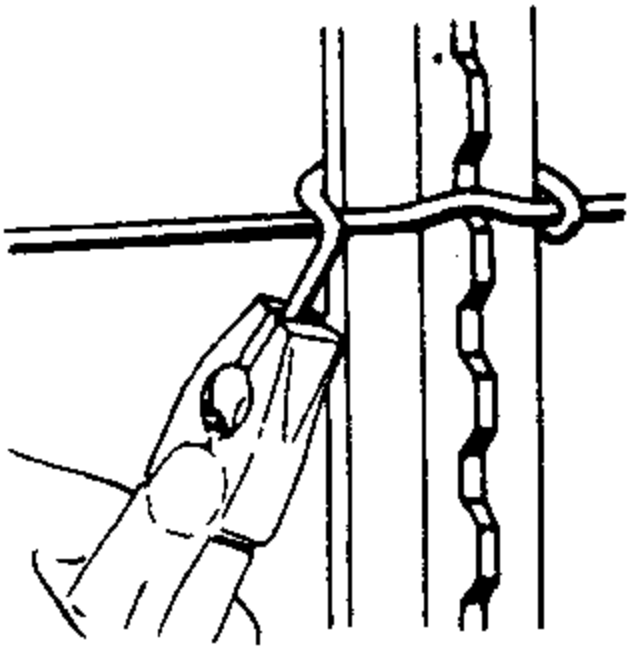
4. Repeat procedure with every other wire working toward top and bottom
5. Cut and wrap remaining wires leaving top wire until last

ATTACHING WIRE TO STEEL POSTS

1. Hook post clamp over line wire and snap into position around the post



2. Bend other side over line wire to form hook



CONSTRUCTING AN END BRACE

1. Start with good solid posts 8’ long, railroad ties make good end posts
2. Bury the posts 8’ apart and use a 4” x 4” (or split cedar) as a cross member
3. Install a brace wire, bottom of the end post and the top of the other, if installed the other way around the fence will lose strength.
4. Twist the brace wire with a stick or a piece of pipe until tight